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ABSTRACT

This guidebook is based on the belief that e-business applications will transform academia and academic support experiences, with learners participating in distributed learning environments that mix physical and virtual learning resources in many combinations, and it offers insights into the strategies and planning needed to develop a college campus infrastructure of e-business applications, products, and services. The ten chapters cover the following topics: (1) "What Is E-Business and Why Is It Important?"; (2) "The Status of E-Business Today and Tomorrow"; (3) "Future E-Business Applications in Education"; (4) "Building Migration Paths for E-Business in Education"; (5) "Technology Infrastructures, Tools, and Competencies"; (6) "Investing in Technologies To Support E-Business: Important Roles for the Business Officer" (7) "Policies, Standards, and Legal and Security Competencies"; (8) "Strategic Alliances and Co-Sourcing Competencies"; (9) "New Tools: Electronic Publishing, Learningware, Learning Agents, and Online Communities"; and (10) Paving the Way for E-Business: 20 Initiatives for Your Learning Enterprise." A list of on-line resources is appended. (Contains 78 references.) (CH)

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ED 435 330

E-Business in

Building Competencies for Tomorrow's Opportunities

HE 032 550

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About Strategic Initiatives Inc.

Strategic Initiatives is a management consulting firm that specializes in guiding colleges and universities, corporations, and associations toward the Knowledge Age. This involves positioning its clients for success in dramatically realigning industries where E-business will be substantial. Its services involve realigning its clients' products, services, and experiences to Web-based platforms and extending products to reach broader markets. Strategic Initiatives is supporting many clients through expeditionary strategy and product development, forging new strategic alliances, and attracting investment.

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-Business in Education

What You Need to Know

Building
Competencies for
Tomorrow's
Opportunities

DONALD M. NORRIS

MARK A. OLSON

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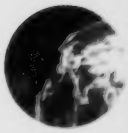
Executive Summary



A Simple Thesis

E-commerce applications are a powerful force in today's economy. Ultimately, they will affect all sectors and transactions. The most dramatic E-commerce applications have premiered in business and government settings, but education is next in line.

E-commerce is the marketing, sales, and payment for products, services, and experiences through electronic means. The first wave of E-commerce applications merely digitized existing practices. Subsequent applications are reinventing and transforming the manner in which organizations interact with employees, learners, members, suppliers, customers, and other stakeholders. This transformation is called *E-business.*

In tomorrow's learning environments, E-business will be big business. It will also be *everyone's* business. The time is ripe to expand your perspective on the potentials for E-business in education.

Pervasive electronic commerce applications will radically transform the manner in which most colleges and universities conduct their most basic business functions. Within two or three years this transformation will be heralded by ubiquitous and uniform access to networked computing, collaborative initiatives among institutions and business solution providers, and legislative reform of key regulatory law. As a result, campuses will reduce operating expenses, enhance service quality, and outsource (or co-source) noncore business operations.

E-business will also transform academic and academic support experiences. Twenty-first century learners will participate in distributed learning environments that mix physical and virtual learning resources and experiences in every combination imaginable. These learning experiences will be personalized and continue through long and productive lives. Learning, work, and personal development will be fused together in our everyday lives through vibrant *communities of practice,* made possible through E-business.

Developing tomorrow's E-business environments and applications requires an *expeditionary* approach to strategy, planning, and the development of infrastructure, products, services, and experiences. This guidebook provides insight on how to build your campus's migration paths to the future using the techniques of E-business. It also identifies new sets of competencies that will be acquired through these expeditions.

Successful, emerging E-business applications have changed not just *technology* but the *psychology* of how organizations function. This requires close cooperation between all parts of the organization. For colleges and universities, this means that the campus executive must understand the strategic significance of investing in technology infrastructure and E-business capabilities. It also means cooperation and commitment among the chief academic officer, the chief financial officer, and the chief information officer.

The chief financial officer plays a significant role in charting campus migration paths for E-business. Many of the first E-commerce applications on campus are in functional areas that are the CFO's responsibility. Outsourcing and co-sourcing are typically areas of expertise for CFOs and auxiliary officers. Moreover, the CFO will be counted on to provide perspective on a number of issues critical to the development of E-business applications in academic and academic support areas: financing technology infrastructures, forging more ambitious strategic alliances, discovering new sources of revenue, and determining the impact of E-business on existing revenue streams, to name a few.

Remember that in tomorrow's colleges and universities and related learning environments, the big business of E-business will be everyone's business. Trustees, presidents, provosts, vice presidents, deans, faculty, technologists, administrative staff, and students all have roles to play in the successful deployment of E-business on campus. They must all be involved in understanding and charting these developments.

Today's Education Industry	Tomorrow's Knowledge and Learning Industry
E-commerce	E-business
First generation of E-commerce: gestation	Future generations of E-business: transformation
Early customization	Mass customization, personalization
Old economic rules	New economic rules
Stand-alone products and services	On-line communities, fused products, services, and experiences
Distance, virtual, and transformed learning	Distributed learning
Occasional advising	Perpetual, intrusive advising
Incremental strategy and products	Expeditionary strategy and product development
Access and availability	Trust and integrity
Outsourcing of auxiliary functions	Strategic co-sourcing relationships in many academic and administrative functions
Campus-based ERP applications	Co-sourced off-campus utilities and campus-based ERP
Traditional publishing plus new, experiments	A diversity of traditional and transformed publishing
Publishers own intellectual property, control rules	New competitors will rewrite the rules for publishing
Digitized products, services, and experiences	Communities and portals
Product-centric intermediaries	Activity-centric aggregators, metamediaries, and learning agents
Economics of distance	Economics of attention and permission

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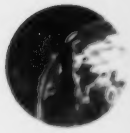
CHAPTER 

What Is E-Business and Why Is It Important?

THE FIRST WAVE OF E-COMMERCE

Electronic commerce is the marketing, sales, and payment for goods, services, and experiences using electronic means. E-commerce in education demands exploitation and integration of campus networks, intranets, and the Internet to support the delivery of academic and administrative applications.

Most have already experienced the first wave of electronic commerce applications. Typical emerging E-commerce activities include:

- acquiring information on colleges and universities and applying for admissions online;
- ordering and paying for catalog purchases from a range of suppliers—L.L. Bean to the University of Virginia Bookstore;
- expediting banking, commercial, and various financial transactions by electronic transmission;
- ordering and paying for books from Amazon.com, CDs from Firefly, or electronic journals from Elsevier Electronic Subscriptions;
- using electronic deposit and debit payment systems;
- utilizing online text and video resources under college and university licensing agreements;
- subscribing to online journals and new services; and
- using a campus credit card, debit card, or smart card to purchase products, goods, and services.

Convenience

Speed

Price

Unequaled Selection

The first wave of E-commerce applications have succeeded because of some combination of convenience, speed, low price, and unequaled selection. They have improved the efficiency and convenience of existing processes. However, they haven't dramatically affected the lives of most academic institutions—yet.

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THE NEXT GENERATIONS OF E-COMMERCE

The second and third wave of E-commerce applications will tell a different story. E-commerce will emerge as the most important component of a powerful next generation of information and communications technology mediated applications. These applications have the potential to enable dramatic changes and transformation in how education institutions function.

The next generations of E-commerce-enabled applications in education will affect every student, faculty, staff, supplier, and strategic partner involved with the education enterprise. They will herald a new epoch in online commerce dealing with learning, research, and knowledge management.

The next generation of E-commerce will be transformative. Building on the foundation of the first generation, subsequent applications will reach new heights and deploy new tools.

First Generation of E-Commerce	*Subsequent Generations of E-Commerce*
• Convenience and speed.	• Online communities of users that add value and create new products, services, and benefits.
• Applications in existing administrative operations and online courses.	• New tools to make E-commerce even more powerful: virtual front- and back-office operations and interactive and flexible learningware.
• Lower prices or more choices.	• Prices driven by demand rather than supply. Dramatically increased choices, creating need for personal agents.
• Beginning efforts at customization.	• Mass customization; products customized to each individual.
• Use in distribution of books, course packs, and journals.	• New approaches to electronic publishing—electronic books, online sales of customized text and video from multiple publishers.
• Basic E-commerce competencies developed.	• E-commerce competencies extended to new heights.
• Beginning efforts at customization.	• Mass customization.

FROM E-COMMERCE TO E-BUSINESS

Many of the best existing E-commerce applications are in the worlds of business and government. In these settings, strategists have moved beyond the first generation of E-commerce applications. They have discovered how to use E-commerce not merely to digitize existing practices, but to innovate and reinvent interactions with customers and stakeholders.

In these settings, practitioners are using a new term to refer to subsequent generations of E-commerce-enabled applications, which are transforming the way these organizations

conduct their business and interact with employees, learners, members, suppliers, customers, and stakeholders. Put simply, this transformation is called *E-business.*

Strategists understand that E-business enables both new and legacy processes to function differently. Within education, we begin to glimpse the transformation:

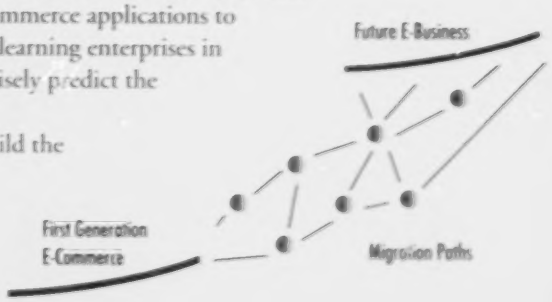
- E-commerce capabilities are dramatically changing the conception and creation of content, the production of administrative and academic products and services, and their distribution and use.
- As a result, the customer, learner, or user becomes more powerful. The learner or user performs many functions directly; others require new kinds of assistance from learning agents and other intermediaries.
- Successful adoption of an E-business perspective eliminates existing "silos" between academic and administrative departments.

Many insights from the worlds of business and government are finding their way into academic applications. Educational leaders should understand leading-edge E-commerce applications in all settings as they guide their institutions into the future.

BUILDING MIGRATION PATHS TO THE FUTURE OF E-BUSINESS

How can educators use insights from E-business developments in business and government to position their institutions for future E-business opportunities in the world of learning? Educators must look beyond the *misleading* leading edge of today's early E-commerce applications to envision how E-business and distributed learning could transform learning enterprises in the future. However, no futurist's vision is sufficiently keen to precisely predict the world of E-business in the Knowledge Age.

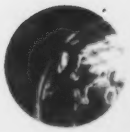
So, we must move forward using E-commerce initiatives to build the competencies necessary to succeed. Today, most colleges and universities are slow in developing the competencies and pilot projects required to engage in virtual commerce. Our intention is to promote acceleration of this process.



A GUIDEBOOK FOR LEADERS

E-business is too important to be left to the technologists alone. Who needs to understand the transformative potential and basic concepts and applications of E-business? Start with the trustees, the president, the provost, and the vice presidents responsible for institutional strategy. Follow with the deans, department chairs, and faculty engaged in distributed learning. Include administrative support and auxiliary enterprise staff who will use these tools. In short, encompass everyone associated with the 21st century learning enterprise.

This guide is designed to provide educational leaders with the insights necessary to understand the importance of E-business in tomorrow's learning enterprises. It identifies the competencies that institutions will need to successfully utilize the new tools of E-business. It blueprints migration paths that use expeditionary E-business initiatives to position institutions for success. Expeditionary initiatives are adaptive programs that are developed so they can continuously measure what learners and users need and incorporate those features into the program. They will enable educators to continuously refine their E-business applications.

CHAPTER 

The Status of E-Business Today and Tomorrow

HERE TODAY, BIG TOMORROW

"Business on the Net is booming. And from retailers to brokers to suppliers, it is destroying old habits and creating opportunities."

—*Business Week*, June 22, 1998.

How substantial is E-commerce today? The Forrester Group, as reported in *Business Week*, calculates that E-commerce was a $48 billion industry in 1998. By 2003, they expect E-commerce to account for $1.3 trillion in the U.S. economy alone. Worldwide, Internet commerce sales could be as high as $3.2 trillion by 2003.

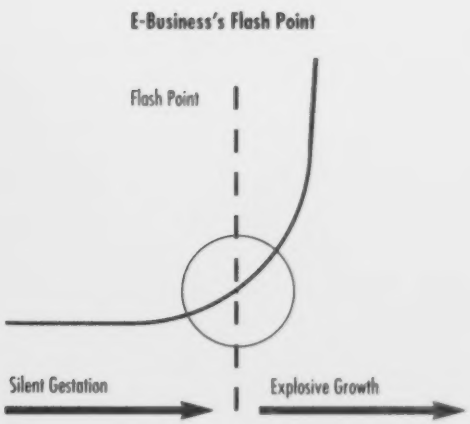
Some groups calculate even higher figures. A recent study by the University of Texas, paid for by Cisco Systems, estimates that the Internet economy generated $301 billion last year and created 1.2 million jobs.

E-commerce typically accounts for savings of 5 to 10 percent in the cost of doing business. The savings are even greater in particular areas, such as the distribution of information-based products. If these savings are redeployed, this could produce a substantial benefit to individual enterprises and the economy at large.

But that's only part of the story. The real benefit from E-commerce is from the transformative impacts of new online communities, personalization, one-to-one marketing, mass customization, and new tools for learning, learning management, and academic support. These will yield real marketplace advantages that will be shared by small and large enterprises across the economy.

I'LL BELIEVE IT WHEN I SEE IT

Skeptics say they haven't experienced much impact from E-commerce yet. So how can it grow by a factor of 10 in three years? Simple. These are the stages of E-commerce:



Early gestation. In the early stages of development E-commerce appears to be a minor factor, a new technology in search of applications, a minor enhancement that performs existing functions more efficiently. During this stage, users experiment, organizations attempt to transfer their products and services online, and everyone struggles to succeed in the new environment. Skeptics dismiss the new fad.

The flash point. At some point during this period of gestation, significant changes occur. Providers respond to customer feedback and begin to use the new potentials of the medium—such as interactivity among customer communities, and customizing and personalizing of products and services. Users discover these new capabilities, and explosive growth ensues—a flash point. Most observers believe the flash point for E-commerce in business-to-business applications has already occurred. The flash point in consumer-focused E-commerce may come within the next six months or sooner.

Learning from other settings. The flash points for administrative and business-to-business applications in educational settings may be approaching. However, the flash points for the next generation of academic and academic support applications may not come for several years. We can learn what to expect by comparing the status of E-commerce applications in business, government, and education settings.

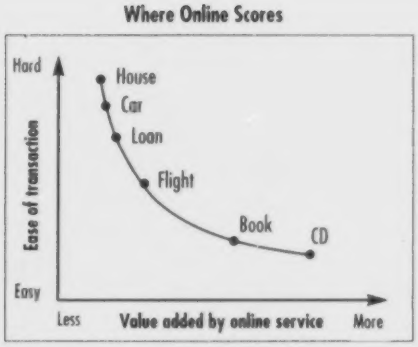
EARLY AND LATE ADOPTERS OF E-COMMERCE

Looking at today's E-commerce activity, a clear set of early and late adopters emerges:

Business-to-business transactions. The greatest early adoption for E-commerce has been in business-to-business transactions, which account for 78 percent of current E-commerce applications. Most of this has been in durable goods and wholesale purchases, particularly in computers and other high-tech hardware, office supplies, and electronic goods. Industry analysts see excellent prospects for future growth.

Many educational institutions have used Electronic Data Interchange (EDI) or Net Commerce to facilitate institutional purchases, and the prospects for growth are excellent. Many institutions will purchase a wide variety of services or outsource delivery services to Net-savvy third-party providers. New generations of virtual front- and back-office operations will emerge.

Where Online Scores



Sources: Microsoft; *The Economist*

Consumer or learner sales. To date, the greatest successes for E-commerce have been with travel; computer hardware, software, and technical services; and books, music, and entertainment. Use of E-commerce tools for automobile sales is gaining—as it is for housing and financial services—but most transactions and purchases for these items still happen the old-fashioned way.

Current research suggests that online purchases succeed when the value added by online service is high and the transactions are simple. Over time, these preferences may shift as consumers become more familiar and facile with E-commerce tools.

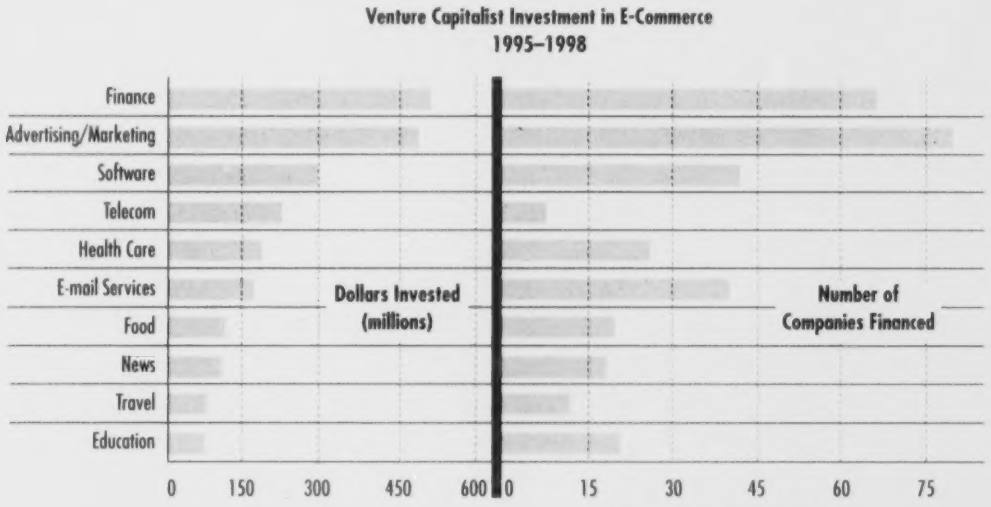
Products and services in the early adopter categories for consumer and learner purchases enjoy excellent prospects for future growth.

Learning and learning support services. These have been late adopters of E-commerce. Online activities such as access to admissions materials, financial aid information, learning materials, and the use of campus cards have flourished. Online bookstore operations—for traditional books, courseware, supplies, and campus merchandise—are starting to develop.

In the future, E-commerce will likely play a major role in new variations of electronic publishing, which will become an important component of distributed learning. E-commerce will be critical to the success of the new generation of customizable, interactive learningware that is being developed by initiatives like the Instructional Management System (IMS) of the National Learning Infrastructure Initiatives (www.imsproject.org).

INVESTMENT IN E-COMMERCE

Another way of highlighting the relative importance of E-commerce is to focus on how and where venture capitalists, have invested in E-commerce. The following table shows the E-commerce investments of venture capitalists, from 1995 to 1998, based on dollars and number of companies financed. This table clearly establishes the leadership of the financial, advertising/marketing, and software sectors. It also reiterates education's role as a follower and late adopter.



Source: *Business Week* from Ventureone Corp.

PERSONALIZATION AND CUSTOMIZATION

The hottest developments in E-commerce today involve the personalizing of products and services to meet individual needs based on information gathered from patterns of behavior, buying patterns, or expressed preferences. The goal is one-to-one marketing, where each individual is treated as a market segment.

Personalization uses intelligent agents, neural networks, collaborative filtering, and other technologies to create customized relationships with each customer—*mass customization.* The following are examples of personalization at work in current Web sites.

Amazon.com *www.amazon.com*
Software logs interests and purchases, matches them with those of other customers, and suggests products ordered by people having similar tastes.

Dow Jones *www.djinteractive.com*
Allows visitors to build their own custom keywords for profiling and searching of news and articles.

Estee Lauder *www.clinique.com*
Site recommends skin-care and color items based on user-entered preferences.

Excite *www.excite.com*
Web portal gradually extracts information on personal preferences and creates a unique customer environment.

Garden *www.garden.com*
Home page tailored to climate based on zip code. Store orders and preferences. Site offers online garden planner and garden doctor to answer questions.

My CDnow *www.CDnow.com*
Site creates a music store customized to personal tastes.

Sparks *www.sparks.com*
Allows visitors to create personalized greeting cards.

Adapted from *Business Week*, October 5, 1998, and *ComputerWorld*, March 22, 1999.

Does personalization work? Jupiter Communications conducted a survey of 25 companies engaged in personalization of their E-commerce sites. *In the first year these companies boosted new customers by 47 percent and revenues by 52 percent.*

NEXT STOP FOR PERSONALIZATION: EDUCATION

The technology and tools of one-to-one customer relationships are being developed and perfected in business and government applications. Soon academic environments will be making use of them. Although learning agent tools for one-to-one marketing are being developed in commercial settings, they offer significant opportunities for distributed learning. E-commerce will enable the combination of content, interactive learningware, and learning agent tools, creating personalized, flexible learning experiences anywhere, anytime.

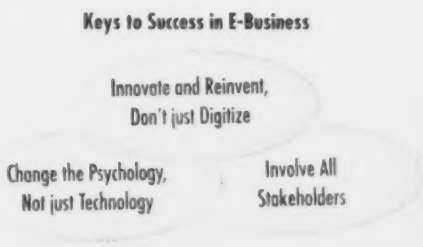
Supported by automated tools, humans serving as learning agents—think of them as personal trainers for learning—can not only help learners assess and fulfill their learning needs, they can anticipate their needs and preferences before the learner is aware of them.

It shocks many educators to think that learning agent tools will be developed, tested, and deployed in other sectors, then later adapted for the education sector. But, that is precisely what is happening. The three tool kits of one-to-one marketing are *channels of distribution, content,* and *learning agent relationships.* These tool kits are being widely developed in business, government, and association sectors.

LESSONS FROM THE FIRST GENERATION OF E-COMMERCE

A recent panel of government-sector E-commerce experts in government convened by a major consulting firm noted the following three lessons:

1. Simply automating existing processes is very expensive and produces minimal returns on investment. Rather than merely digitizing existing processes, one must innovate and create new ways of doing things.
2. Discovering, enlisting, and seeking out all of the stakeholders in a project is essential to success. The full community of stakeholders yields both political buy-in and a continuous sequence of rich and surprising insights.
3. The challenge is not in the *technology*, but in the *psychology*. Changing organizational culture is key. The success of any E-commerce business depends on cooperation and commitment from the CEO, CFO, and CIO (in academic settings, the chief academic officer would be included).


Keys to Success in E-Business
Innovate and Reinvent, Don't just Digitize
Change the Psychology, Not just Technology
Involve All Stakeholders

These insights can find fertile application in education as well.

TRANSFORMING THE ECONOMICS OF ONLINE COMMERCE

E-commerce does more than merely migrate existing products and services online. The basic economics of products, services, and experiences change. Consider the following examples:

Buy.com. This site makes a commitment to offer the lowest online prices, even if it means selling below cost. It intends to make up the difference through online advertising (www.buy.com).

Rough Guides. This site offers travel guides for free, reaching a greater audience of potential travelers. Sales of hard copy books have increased sharply as a result (www.roughguides.com).

Emedicine.com. This textbook on internal medicine is made available for free on the Web, continuously updated by teams of physicians. The strategic intent is to attract a community of practice. Revenues will come from advertising and sales of products and services to the community of practice (www.emedicine.com).

A number of interesting principles of E-commerce economics emerge:

- Some buyers are willing to pay a price premium for convenience and customization—especially at rush periods like Christmas.
- Many items like books, CDs, and apparel become commoditized, allowing a reduced online price.
- It is often necessary to give online products away in order to sell other versions or related products, services, and experiences.
- The ultimate goal is to build online traffic and buying groups of a critical mass, and ultimately, to create online communities.

Over time, the economics of online communities of practice will become a major driving force in E-business.

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TRANSFORMING ECONOMICS THROUGH ONLINE COMMUNITIES

Online merchants want to establish communities of buyers that will enable them to reach customers easier and know them better. Examples of online communities include the following:

Cisco Systems. Business-to-business connections allow Cisco customers and users to answer one another's questions (www.cisco.com).

WebMD. This site facilitates practice by creating an online connection between hospitals, doctors, and health insurers (www.webmd.com).

World Clinic. This community of doctors and hospitals offers many potential applications (www.worldclinic.com).

Business Services Network, CALCPA. This intranet serves California CPAs, enabling practitioners to answer business ad practice questions, develop alliances, and win business.

These practices are being deployed in emerging learning communities as well, enabling their developers to fuse products, services, and experiences that used to stand alone. Over time, these fused products, services, and experiences will change the power relationships that have existed in the education, publishing, and meetings industries.

CASE STUDY: PEOPLESOFT ADOPTS THE COMMUNITY METAPHOR

Online Communities, Fused Products, Services, and Experiences

Stand-Alone Products

A number of software developers and other technology companies have focused on communities in their latest generations of products. Specifically, PeopleSoft is aggressively migrating its traditional enterprise resource planning (ERP) products to Internet- and intranet-based means of doing business. The PeopleSoft Business Network (PSBN) organizes tools into communities based on functional business processes.

For example, end users of these new tools can enter a "procurement community" to engage in procurement functions. They receive important information and other support based on their personal needs and on the community to which they belong. Other communities are being developed for travel and expense management, payroll management, asset management, benefits, and recruiting. Even more are on the drawing boards.

PeopleSoft has also established an E-Business Merchants Community, which is currently recruiting businesses to provide products and services relevant to these user communities.

ERP companies realize that an E-business approach is far more transformative. First, it reaches beyond the small cadre of functional experts who benefit from most ERP systems to reach all employees. Second, it also reaches out to include customers, suppliers, and strategic allies.

Many software vendors that provide administrative and academic support solutions to higher education are adopting the community metaphor, and many developers of learning software are applying the community-of-learners metaphor.

LEARNING FROM OTHER SECTORS: E-COMMERCE WEB SITES

Educators need to follow the latest developments in E-commerce, whether they occur in education, business, or government. The Web sites below show some of the latest exemplary practices in E-commerce. Many of these leading practices are being pioneered in online retail applications.

E-Commerce Web Sites

IBM's E-Commerce Guide	*www.e-comm.internet.com/e-comm*
Best Practices in Federal Government	*www.gsa.gov/fitec/bestprac.htm*
Electronic Commerce Resources	*www.ini.cmu.edu/NETBILL/commerce.html*
NSF	*www.fastlane.nsf.gov*
Federal Electronic Commerce Program	*www.ec.fed.gov*

LEARNING FROM OTHER SECTORS: RESOURCES FEATURING E-BUSINESS

For educators wishing to scan magazines dealing with the latest developments in E-commerce and E-business from an applications, rather than a technical, perspective, the following resources are excellent: *The Industry Standard, Business 2.0, Business Week, Fortune, Fast Company,* and *The Economist.*

In May 1999, *Business 2.0* featured an article titled "The Top Ten: The Best and the Brightest E-Commerce Companies." The focus of this piece was on the companies that most effectively utilized E-commerce in their business as part of their product set—to serve customers, to reach markets, and to distribute products and services—making them the top Net economy companies.

By *Business 2.0's* methodology, Cisco Systems is the top E-commerce company. Its product line features routers, ATMs, and other networking gear, but only 10 percent of its total sales are from net revenues. What differentiates Cisco is its use of E-commerce in marketing and distribution and in solving customer problems through user-based communities of practice.

There are lessons in these examples for organizations like colleges and universities that are late in adopting E-business tools. The key to success lies in focusing on the needs of members, customers, suppliers, and stakeholders in ways never before possible. The goal is to become indispensable, and the means to do this are provided by E-business. The key to success in E-business lies in focusing on meeting the needs of customers and stakeholders.

The following table identifies the top Net economy companies.

The Leading Net Economy Companies As Assessed by* Business 2.0 *Magazine

Cisco Systems *www.cisco.com*
$6.36 billion Web revenues, 10 percent total sales

Dell Computer *www.dell.com*
$3.04 billion Web revenues, 17 percent total sales

IBM *www.ibm.com*
$3.31 billion Web revenues, 4 percent total sales

Intel *www.intel.com*
$5.00 billion Web revenues, 19 percent total sales

America Online *www.aol.com*
$3.30 billion Web revenues, 100 percent total sales

Amazon.com *www.amazon.com*
$0.61 billion Web revenues, 100 percent total sales

Marshall Industries *www.marshall.com*
$1.10 billion Web revenues, 65 percent total sales

3Com *www.3com.com*
$2.00 billion Web revenues, 31 percent total sales

Ingram.micro *www.ingrammicro.com*
$3.00 billion Web revenues, 14 percent total sales

MCI Worldcom *www.mciworldcom.com*
$2.20 billion Web revenues, 7 percent total sales

Adapted from "The Top 10: The Best and the Brightest E-Commerce Companies," *Business 2.0,* May 1999, pp. 64–65.

In late 1998, The Boston Consulting Group polled 127 online retailers in seven product categories to provide benchmarks and analyze trends. The study concluded that online retailers should focus on the following:

- developing a deep understanding of customer needs;
- exploiting the richness of the Internet to create distinctive retail experiences;
- developing "scaleable" and "defensible" business models;
- leveraging customer relationships through personalization, customization, and cross-selling;
- "branding" the total online retail experience by delivering a flawless, distinctive experience;
- using online retailing to shorten the marketing learning curve;
- exploiting the connectivity of the Web through "contextual selling"—placing the product next to related Internet content;
- converting browsers to buyers; and
- creating "sticky" relationships with customers—relationships that last.

The full results of this survey can be found at www.shop.org/research.

Debunking the Myths About Online Retailing

Myth: The Internet is only appropriate for selling certain products.
Truth: *Not so. The true litmus test is the ability of the retailer to leverage the Internet to create an end-to-end shopping experience that is enjoyable and offers value.*

Myth: Online retailing can only grow by cannibalizing traditional retailing.
Truth: *Wrong. Online retailing expands total revenues across retail categories.*

Myth: Online retailing reduces margins and commoditizes products and services (turns high value-added products into commodities).
Truth: *Not necessarily. Shopping on the Internet is rarely limited to price considerations alone.*

Myth: Growth opportunities are minimal for online retailers without a direct distribution capability.
Truth: *The Internet can serve to leverage and reinforce existing distribution channels. But traditional channels will be replaced in 5 to 10 years by direct-to-customer approaches.*

Myth: Portals such as Yahoo and AOL are capturing all the value and acting as a barrier to success for retailers.
Truth: *Too soon to tell. Portals have been critical to the growth of online retailing, but the dynamics will shift to give more power to strong retail sites.*

Myth: Although online retailers are acquiring new customers and generating transactions, these retailers show little hope of turning a profit.
Truth: *That's premature. While initial costs of E-commerce are substantial, savvy online retailers are investing early to achieve critical mass quickly. This will lead to supplemental revenue streams and higher sustainable margins, over time—or so the theory goes.*

E-Commerce Arrives for Christmas 1998

Christmas 1998 may be remembered as the season when E-commerce arrived in the public psyche. Online sales tripled. The $3.5 billion in holiday sales accounted for over 45 percent of online retail sales for the year. Can these figures be sustained? Can the online retailers reach a mass market? Will this be remembered as the beginning of the next wave of E-commerce?

E-COMMERCE IN EDUCATION

Education will not be the leading edge of E-commerce, but it will benefit from practices and tools developed in leading E-commerce enterprises. It will also be affected by changing perceptions and the comfort of consumers with E-commerce practices.

Perceptive educational leaders will learn from these developments to establish leadership in E-commerce applications in education. The following table applies Patricia Seybold's observations on how to succeed with online customers to how to succeed with online learners. Seybold is the author of *Customers.com: How to Create a Profitable Strategy for the Internet and Beyond.*

"The Web will fundamentally change customers' expectations about convenience, speed, comparability, price, and service."

Fortune, December 7, 1998.

How to Succeed in E-Learning

1. **Target the right learners.** Target learners who value customization, convenience, and speed.
2. **Create a consistent experience for E-learners.** Consistency, saving time and reducing aggravation become part of your "brand."
3. **Streamline processes that affect the learner.** Redesign processes to improve the learner's experience. Involve a variety of key stakeholders in the redesign.
4. **Develop a complete view of your relationship with your learners.** Understand all past interactions and the learner's needs in your interactions.
5. **Let learners help themselves.** Many learners will want to participate in their navigation and creation of personal and learning experiences.
6. **Help learners do their jobs.** The most effective learning is active learning applied to one's profession, trade, philanthropy, avocation, or area of expertise.
7. **Deliver personalized service.** Learners want to interactively personalize their learning experience.
8. **Foster community.** Creating online communities that serve learner needs is the new frontier.

Adapted from *Customers.com: How to Create a Profitable Strategy for the Internet and Beyond* by Patricia Seybold (New York: Times Books/Random House, 1998).

CHAPTER

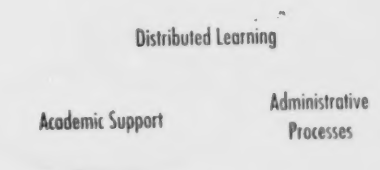
Future E-Business Applications in Education

TOOLS FOR TRANSFORMATION

E-business in education is about much more than an online, alternative means of payment. The ultimate impact of E-business-supported applications on education will be truly transformative. Learning, learning support, and administrative processes will all be fundamentally changed.

By linking people through a pervasive tapestry of interactivity and keeping track of their transactions, E-commerce-based systems will enable learning enterprises to respond to learners' needs, facilitating a range of customized learning experiences, learning support applications, and administrative services.

Distributed learning. Electronic commerce in education will enable 21st century learners to participate in a distributed learning environment that mixes physical and virtual learning resources and experiences in every combination imaginable.



Distributed Learning

Distributed learning includes the full spectrum of learning experiences, including campus-based and network-centric learning, with these variations in delivery:

- Same time, same place
- Same time, different place
- Different place, different time

Distributed learning is the new frontier, and E-business is essential to achieving its potential.

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New forms of payment. Learners will have the option of paying for the intellectual property and academic support services for distributed learning through both traditional forms of payment and online transactions.

For some types of learning and support services, front-end, lump-sum payment will be supplemented by per-use, point-of-sale payment for such things as merchandise, courseware, information and intellectual property, and all kinds of services. A full range of instruments will be used:

- Electronic checking.
- Digital cash.
- Smart cards, debit cards, and credit cards.

All learners will be affected. Distributed learning is not just for students enrolled in virtual universities. Students in all learning settings, including students in undergraduate programs, will be using distributed learning to enrich their experience. They will be using E-business to do such things as acquire learning resources and create interactive learning relationships.

Distributed Learning

Distance, Virtual, and Transformed Learning

New learning materials. Materials from virtual universities, Web-based courses developed by traditional institutions, and the new generation of customizable learningware will all be used by learners in a wide diversity of settings. Institutions will need to have the competencies to support a full range of electronic means of exchange. Solutions to intellectual property problems will be needed before these capabilities can be fully achieved.

Academic support. E-business will enable a new generation of academic support tools that will be available in person, online, or through a combination of both:

- *Learning agents* will be humans supported by technology. They will help learners navigate and make learning choices, using sophisticated artificial intelligence tools and personal, integrity-based advice. Learning agents will need to be recognized by learners as having the integrity to represent their interests honestly. Learning agents will serve as personal trainers for learning.
- *Tutors and assessment specialists* to support the distributed learner.
- *Personalized, customized learningware* and learning experiences for individual learners.
- *Intrusive advising* to notify learners when their progress or performance falls below established targets.

These new academic support functions will involve faculty and new types of academic support staff, tutors, mentors, and personal trainers.

Administrative support. As institutions develop their E-business capabilities, they will begin to transform administrative operations. Traditional services that today are characterized by data-intense, paper-based, clerical-mediated delivery, will become self-service, no-stop-shop applications. Business trading partners will emerge to provide powerful co-sourcing enterprise delivery mechanisms to further reduce complexity and cost and make applications more user friendly. Enhanced services in back-office transaction processing will leverage the scale economies of the networked technologies and enable institutions to focus on "front-office" personal counseling, instruction, and value-added services.

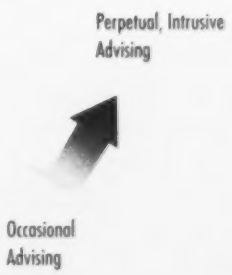
The Point About E-Commerce

Over the next two to three years, the emergence of pervasive electronic commerce applications will transform the manner in which colleges and universities conduct their most basic business functions.

This transformation will be signaled by ubiquitous and uniform access to networked computers, collaborative initiatives among institutions and business solution providers, and legislative reform of key regulatory law.

The results will include reduced operating expense, enhanced service delivery, the outsourcing (or co-sourcing) of noncore business operations, and a return to a focus on education and research.

Administrative and academic support utilities. In the next decade, E-business will enable the surgical outsourcing—or *co-sourcing*—of many administrative operations. Surgical applications involve outsourcing particular portions of functions, not the entire function. Some of these co-sourced functions will work like utilities, with institutions charged for the number of transactions or amount of service consumed. Powerful new applications will create virtual front and back offices, dramatically changing the way learning enterprises handle administrative and academic support functions. A new generation of co-sourcing relationships will emerge.

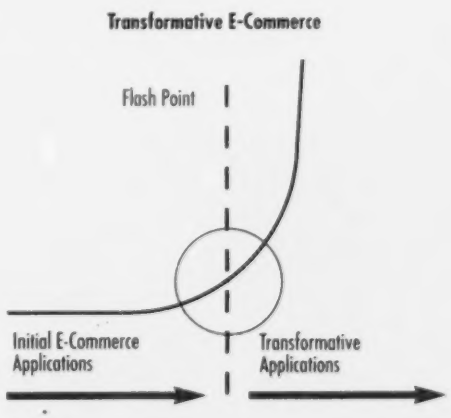


New breed of publishing. Over time, intellectual property rules will realign to the Knowledge Age, and a new age of electronic publishing will flourish. Learners will have a variety of choices between traditional books and source packs, online books and source materials and print-on-demand learning material. Exciting and powerful new syntheses of insight in rapidly changing professional fields will be made available through E-business.

THE FUTURE OF E-BUSINESS FOR LEARNING ENTERPRISES

Today's E-commerce applications are the precursors of future ones that will enable forms and levels of distributed learning, academic support, and administrative processes not yet invented. The tools to support these new experiences are now under development, and when introduced they will dramatically affect institutional and learner transactions.

Colleges and universities must prepare now for a future of mature E-business applications by developing expeditionary relationships with business partners who share an interest in learning applications. Traditional higher education partnerships have largely involved discounted purchase agreements or license agreements that favor volume purchases. In the future, institutions will enter into joint ventures and limited liability corporation structures (LLCs). These will combine the best of corporate technologies and investment capacity with the college and university market's laboratory environment for product development. In a spirit of "coop-etition," unique relationships will emerge, defining a new arena of shared investment, shared risk, and shared reward. The rules of engagement are indeed changing in the world of E-business.



Future of E-Business for Learning Enterprises

Institutional transactions

- Purchases from suppliers of all kinds of goods and services.
- Payment for many virtual front- and back-office services on a pay-per-transaction basis (creating a utility model).
- New types of co-sourcing transactions.

Learner transactions

- Financial aid transactions.
- Admissions fees and (lump-sum) electronic payments of tuition.
- Payment for traditional books, course packs, and other learning materials.
- Payment for mass-customized books, course packs, and learning materials.
- Payment for text, multimedia, and other online materials on a pay-per-use basis.
- Payment for learning agent support and other academic support on a lump-sum or pay-per-use basis.
- Debit-, credit-, and smart-card options, plus digital cash options, to pay for all on-campus products and services:
  - Vending
  - Copying
  - Food service
  - Beverages
  - Academics and academic support
  - Recreation, sports, wellness
- Customized and personalized learner experiences and supporting materials.
- Learner participation in learning communities and other communities of practice (professional groups), which will drive learning experiences, learning support materials, books, and other text and media.

CHAPTER

Building Migration Paths for E-Business in Education

ON TO THE FUTURE—ONE STEP AT A TIME

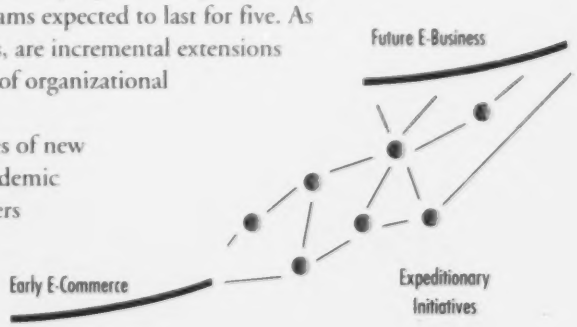
Today's first generation of E-commerce applications is a precursor to future generations of powerful E-business applications that will use tools, policies, and skills that have not yet been developed. The precise dimensions of tomorrow's E-business environment are uncertain. We must prepare for success under a variety of future scenarios.

This calls for a new approach to planning and program development. Our challenge is to build migration paths to the future using E-business initiatives to build the competencies necessary to engage in progressively more ambitious E-business ventures.

EXPEDITIONARY PLANNING AND DEVELOPMENT FOR E-BUSINESS

The word that best captures our approach to planning E-business programs is *expeditionary*. The typical academic approach is to plan for two years for programs expected to last for five. As a result, traditional academic programs expect immediate success, are incremental extensions of existing approaches, and fail to serve as powerful instruments of organizational learning.

Expeditionary planning is different. It creates rapid prototypes of new products designed to continuously change. It creates "sticky" academic experiences that continuously collect information on what learners want and need and how to serve those needs through new derivative products. Five to seven years in the future, the spin-offs and derivatives can be substantially more important than the original product.



One well-known example of expeditionary programs in higher education is the Instructional Management System (IMS) project, which has attracted new strategic partners and changed its focus significantly since inception. Another, the Western Governors University, has changed its focus, forming a new distance learning initiative with the British Open University called the Governors Open University System. More details on these and other examples of expeditionary program initiatives can be found on the Web site of the Society for College and University Planning at www.scup.org/tomorrow/expedite.htm. The following examples further illustrate expeditionary developments.

Blending virtual and physical bookstores: Cornell University. Cornell's bookstore has supplemented its traditional store with a virtual store, positioning the operation for the time when more course materials will be delivered digitally. The bookstore's efforts are the basis of CourseWeb, an initiative by the National Association of College Stores to help stores create Web resources and serve as resources for faculty. See CourseWeb's home page at www.courseweb.org.

Transforming the student loan function: NSLC. The National Student Loan Clearinghouse (NSLC) is a powerful example of an expeditionary initiative that has dramatically changed the way colleges and universities perform a key function. Led by Sallie Mae, the clearinghouse was created as a not-for-profit agency that provides an elegant solution to the formerly complex and burdensome process of enrollment certification. All institutions that participate in the federal guaranteed student loan programs must inform lenders of their students' enrollment status throughout their academic career. Multiple times a year, registrars are required to respond to many individual lender requests for student status confirmation reports (SSCRs), usually through the exchange of computer tapes. Now, via FTP, an Internet-based electronic transfer mechanism, over 80 percent of the student status reports are handled through the clearinghouse. Institutions send the clearinghouse regular enrollment files (all within a secure environment), and lenders send their rosters for enrollment confirmation reporting to compare with them. The NSLC represents an efficient, economic, and effective solution that brings multiple trading partners together, using an electronic commerce infrastructure, to enhance the delivery of billions of financial aid dollars to students and their families.

Web-based loan application and delivery: Laureate. In July 1999, Sallie Mae launched Laureate. This new Web-based loan application and delivery solution takes advantage of an expeditionary approach. Using advanced Internet technology, Laureate provides a comprehensive solution to the complex, multi-party, multi-step business process of loan application, origination, and disbursement. With Laureate, a student in a single Web session can apply for a loan and receive instant approval, with funds reaching the campus within 24 hours. The Laureate Solution seamlessly integrates with campus systems, provides secure encryption, and a Netscape/AOL data delivery tool. Institutions use standard browser technology to access the system to manage funds disbursement, reporting, and changes; borrowers, lenders, and loan servicers use the same system.This Internet technology and architecture enable integrated service delivery, timely and secure transaction processing, and creative, multiparty integration. Trading partners come together to deliver an innovative and integrated solution based on E-business fundamentals.

Admissions on the Web: Multiple companies. Putting admissions applications on the Web is another E-commerce initiative that has emerged over the past few years and is quickly expanding. More than a dozen companies now provide this service, and each offers a range of products and services. Firms like CollegeNET, College Edge, APPLY!, Petersons, and the College Board, compete to provide the best E-commerce solution set. With the proliferation of these businesses comes healthy competition and resulting product enhancement and competitive pricing. However, institutions and consumers find themselves faced with a multiplicity of choices, confusing product attributes, aggressive marketing schemes, and a sense of chaos.

We envision a shakeout in the next few years and expect that a common Web-based admissions protocol will emerge and that national standards will help both consumers and institutions sort out the current proliferation of providers.

Student service on the Web: University of Minnesota. Web-based delivery of student services at the University of Minnesota (www.umn.edu) is the cornerstone of one of the most exciting expeditionary E-commerce initiatives. Using powerful Web front ends that revive and enhance legacy systems, the university has done much more than move administrative applications to the Web. It has entirely reengineered student services and built a student-centered service delivery model. Students are empowered with the best of today's Web-based business tools, giving them access to all student transactions on the Internet.

Some services involve admissions functions, including enrollment, advising, financial aid, and bill payment. The university has pioneered powerful Internet technology to give all students, faculty, and staff full Web-based access to services anytime, anywhere, in a cost-effective and engaging fashion.

Interestingly, the efforts at Minnesota have been supported and advanced through a unique business relationship with IBM—another example of how education is developing powerful relationships with industry trading partners.

Virtual universities as expeditionary ventures. Virtual universities are splendid examples of expeditionary developments. While their initial product platform is a purely virtual learning experience, their greatest potential lies with the derivative products, services, and experiences they will spawn. They are our probes into the future of distributed learning.

For example, seven to ten years from now, one would expect the Western Governors University, along with other virtual universities such as the Michigan and Kentucky virtual universities, to have created the greatest value (and therefore its greatest revenues) in the following ways:

- Providing a variety of virtualized, atomized, and transformed learning materials and services that are part of distributed learning environments on campuses all over the globe;
- Providing certification of mastery for learning achieved elsewhere—anywhere;
- Maintaining skills and competency banks in conjunction with major strategic allies;
- Opening up strategic alliances with international colleges and universities wishing to be partners in virtual or distributed learning enterprises;
- Opening up strategic alliances with the emerging Knowledge Age learning industry; and
- Providing a vehicle for creating distributed learning services that were employed to raise standards for learning in K-12.

While other learning enterprises will contribute significantly to the emerging distributed learning environment of the future, virtual universities have the potential to play a signal role in our migration to new ways of learning and being.

All of these efforts are expeditionary: They are rapidly prototyped initiatives that are continuously changing. They are the platforms that will spawn tomorrow's "killer applications."

A portal for online education: major research universities. Fourteen of North America's major research universities have teamed up to market their Web-based offerings through a common distance education directory.

Coordinated by the University of Washington, this opportunity will be made available to any university classified as "Research I" in the Carnegie Classification. Those most active in distance education that have agreed to participate include: Massachusetts Institute of Technology, New York University, Pennsylvania State University, Stanford University, University of British Columbia, University of California at Berkeley, University of California at Los Angeles, University of Illinois at Urbana-Champaign, University of Minnesota-Twin Cities, University of North Carolina at Chapel Hill, University of Pennsylvania, University of Texas at Austin, University of Washington, and University of Wisconsin at Madison.

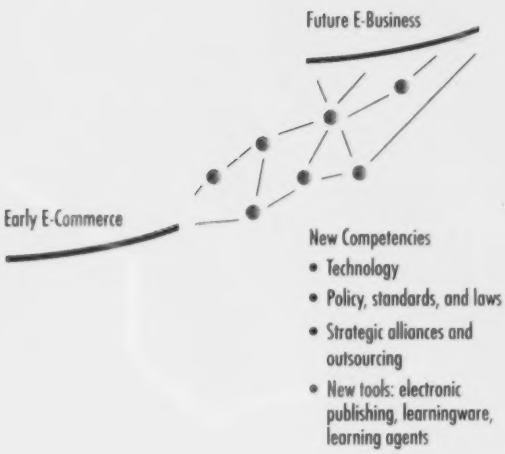
THE NEW EXPEDITIONARY MINDSET

Expeditionary approaches to strategy and product development initially emerged in the laptop computer and software industries, and the E-commerce industry has since embraced them. As educational applications make more use of E-commerce, individualized versions of expeditionary development will be needed.

Expeditionary development of E-business initiatives requires a new mindset, one that focuses on opportunity horizons, not existing products or markets. It creates new competitive space and leads customers in establishing new experiences, rather than following proven customer paths. There is continuous feedback and assessment and a focus on functions, not products. The new mindset maximizes learning from new E-business initiatives, not necessarily their success rate. This reflects commitment, not just in investment, but in dedication to the effort. Many expeditionary initiatives require three to five years to generate derivatives that are the true killer applications that justify the investment in the product platform.

BUILDING COMPETENCIES FOR FUTURE E-BUSINESS

Put simply, institutions need to develop a range of basic competencies to be capable of deploying the next generations of E-business. Their expeditionary initiatives should serve as the vehicle for developing those competencies and taking advantage of new technologies, tools, and capabilities as they are developed.



The new foundation competencies include technology infrastructures and skills; policy, standards, and legal skills; strategic alliance and co-sourcing skills; and capabilities with the new tools of electronic publishing, learningware, learning agents, and online communities. These competencies can be developed internally or acquired through alliances.

The Old Product Logic	*The Expeditionary Product Mindset*
• Serving definable, existing markets	• Targeting opportunity horizons
• Defending today's business	• Creating new competitive space
• Following customers	• Leading customers
• Undergoing periodic assessment	• Undergoing continuous assessment and feedback
• Being product driven	• Being functionality driven
• Maximizing the success rate of new products	• Maximizing the learning from new products
• Reflecting commitment in investment	• Reflecting commitment in persistence

Source: Adapted from Hamel and Prahalad, 1991.

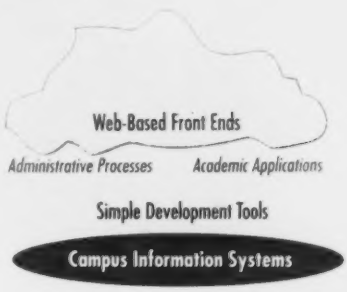
CHAPTER

Technology Infrastructures, Tools, and Competencies

THE NEXT GENERATION OF TECHNOLOGY SYSTEMS

Tomorrow's E-business tools will operate in an environment based on future generations of information and communications technology (ICT) systems. These new systems will rely on Web-based front ends, powerful, yet simple development tools, and substantial database and data warehouse capabilities. Early versions of these systems are on the market today.

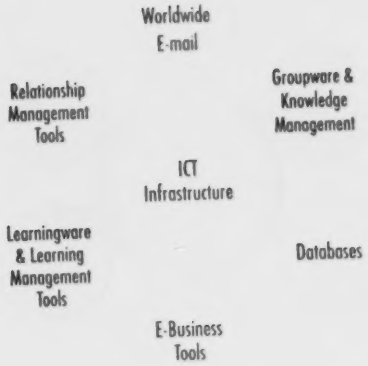
These new systems will create interesting opportunities. First, by putting Web-based front ends on existing systems, they will breathe life into legacy systems. Second, these new systems will expand the focus from enterprise resource planning (ERP) systems to include E-business applications that have the potential to be truly transformative. This will also open opportunities for blending ERP and Web-based "middleware" to create user-friendly interfaces and integrate seemingly disparate applications. This new generation of applications will facilitate the creation of new and personalized academic, academic support, and administrative services.



In the next generation, administrative and academic support services will move decisively from a develop-your-own mentality to a buy-and-pay-for-what-you-use mentality. Strategic alliances with third-party trading partners will leverage economies of scale and create new co-sourcing relationships. Many academic support and administrative services will operate like a "utility" for administrative service delivery, enabling users to pay for the transaction they perform.

From admissions to registration to student billing and financial services, the next generation of student services will be surgically co-sourced to enable extraordinary efficiencies and enhancements.

THE PERVASIVE ATMOSPHERE FOR PERPETUAL LEARNING



Tomorrow's learners will have access to a powerful set of tools for learning, wherever they might be.

This nervous system for learning will be based on a pervasive ICT infrastructure that can be accessed anywhere and at anytime. Layered atop this infrastructure will be a series of tools such as the following:

- Worldwide E-mail linking all learners
- Groupware and knowledge management tools providing interactivity and knowledge sharing
- Learning management systems supporting the learning efforts of diverse groups
- Learningware that fuses content, interactivity, and customization
- E-commerce tools that enable metering of use and consumption and electronic payment
- Databases and knowledge reservoirs to support knowledge management, learning, and problem solving
- Relationship management and personalization tools to support learning and customer intimacy

The initial generation of such systems has been developed by companies such as Sun Microsystems, PeopleSoft, IBM, Oracle, and Dell to address business problems.

TECHNOLOGY TOPICS AND ISSUES RELATING TO E-COMMERCE

E-commerce ... will have major consequences for higher education.... Comparatively few colleges have E-commerce capacity on their Web sites. Data from the 1998 Campus Computing Survey suggest that maybe 20 percent of the research universities offer some level of E-commerce via their Web sites today.

"However, the E-commerce numbers drop to less than five percent for all other kinds of institutions—comprehensive colleges, liberal arts colleges, and community colleges. E-commerce for higher education is not about T-shirts and application fees; rather, E-commerce extends user services for students and will ultimately provide additional access to content for students and faculty."

Kenneth C. Green, *On the Horizon*, January/February 1999.

In reality, few colleges and universities have incorporated the tools of E-commerce into their current operations or plans.

Here are current technology issues driving the first and second waves of E-commerce applications:

- E-commerce protocols
- Digital signatures
- Imaging and document retention
- Smart cards as powerful tools
- Electronic payment—digital cash and E-checking
- Electronic data interchange
- Electronic transcripts of courses and competencies
- Online and distributed services
- Virtual front- and back-office operations
- Web standards and protocols
- Digital catalogs
- Online testing
- Learning agent tools
- Customized publishing
- Purchasing registers
- Interactivity and portals

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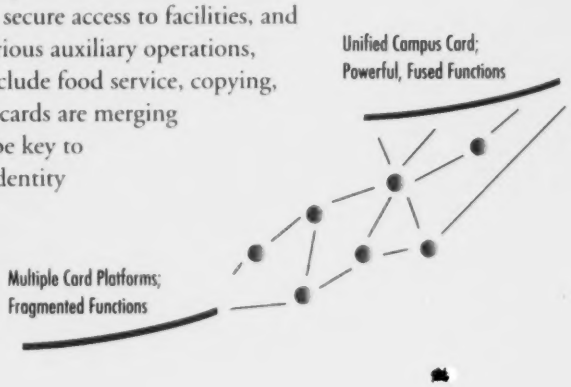
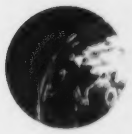
Most of these new technologies are being developed on an expeditionary basis through several evolutionary paths. Take campus cards and smart cards for example: The initial applications of cards on campus were through several streams: campus credit cards, ID cards, and debit/stored-value cards. These cards provided identification, secure access to facilities, and credit or debit functions. Often, they started in the support of various auxiliary operations, such as vending. Over time, the applications have expanded to include food service, copying, and other campus services. In the fullness of time, these different cards are merging into a multipurpose card that performs many functions and will be key to E-business on campus. These cards will allow the verification of identity and conduct of E-commerce transactions at the point of sale, without involving actual databases.



The following campuses have engaged in noteworthy technology initiatives, many involving campus cards or Web-based applications:

Florida State University	www.fsu.edu
University of Michigan	www.umich.edu
Ohio Dominican College	www.odc.edu
Northwestern University	www.nwu.edu
Babson College	www.babson.edu
University of Minnesota	www.umn.edu
University of Delaware	www.udel.edu

This book concludes with a list of 20 initiatives that colleges and universities can pursue to pave the way for E-business on their campus. Many of these initiatives deal with building specific competencies in technology infrastructures, tools, and applications. Critically, they also deal with planning and the importance of creating a wide-ranging campus dialogue on the potentials of E-business to enhance learning, learning support, and administrative functions.

CHAPTER 

Investing in Technologies to Support E-Business: Important Roles for the Business Officer

INVESTING IN CAMPUS INFRASTRUCTURE AND EXPEDITIONARY PRODUCTS

Almost all colleges and universities are spending a greater percentage of their budget on information and communications technology (ICT) than five years ago. These expenditures have involved the deployment of extensive ICT infrastructures and have been driven by the emergence of end-user technology—which has placed technology on the desktop or mobile workplace of most faculty, students, and administrative staff.

Can campuses sustain this level of growth in expenditures? Many are struggling to do so. E-business, though, may yield productivity savings and new sources of revenue that will fulfill the promise of ICT.

Five years from now many leading campuses will likely be spending an even greater proportion of their resources on technologies to enable transformative, E-business applications.

Campus business officers have worked closely with presidents, CIOs, and academic officers to fund the increasing allocation of funds to technology. They have used a variety of tools, including the following:

- Increased budget allocations
- Special student technology fees
- User fees
- Special technology initiatives
- State and federal funding
- Partnership funding from industry, foundations, and other sources
- Revenues from ICT-based services, both traditional and nontraditional

"E-commerce has the potential to be the application that ushers in large productivity changes that prove the worth of information and communications technologies."

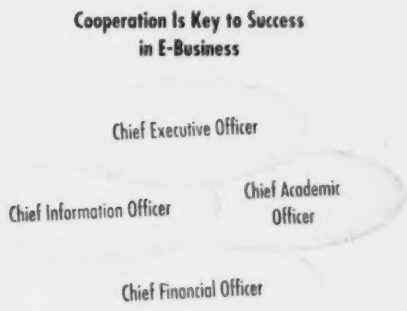
—The Economic and Social Impact of Electronic Commerce, OECD, 1998.

Business officers are in a superb position to frame the deployment of ICT infrastructure as an investment rather than just an expenditure. E-business has the capacity to yield productivity gains and expand markets so that ICT can become an investment.

The potential of E-business is recognized by a group of leading-edge campus leaders. For example, at the annual meeting of the American Council on Education in 1999, David Roselle, president of the University of Delaware, called technology "the educational issue of the next millennium," saying that computers can help institutions streamline their operations as well as enhance student learning.

Roselle said that computer technology had allowed the University of Delaware to significantly reduce "paper traffic" and cut operational costs. For example, Delaware has cut the time for transmitting purchasing orders to vendors from 12 days to one day through electronic transmission. Such processes have enabled the university to reduce its business staff and free up money for use elsewhere on campus.

IMPORTANT ROLES FOR CAMPUS BUSINESS OFFICERS



Successful E-business applications have depended on innovative, transformative approaches that cut across organizational boundaries. For E-business to work in academe, the Chief Executive Officer (CEO), Chief Academic Officer (CAO), Chief Financial Officer (CFO), and Chief Information Officer (CIO) must all work together closely on administrative, academic, and academic support applications.

The CFO is an especially important partner. He or she oversees many of the administrative applications and functional areas that first experiment with E-commerce. Administrative support and auxiliary enterprise units typically hold the outsourcing and co-sourcing expertise on campus. Moreover, the CFO will often be counted on for perspectives on a number of issues critical to the development of E-business in these academic and academic support units:

- Creative financing for technology
- Ambitious strategic alliances
- Productivity enhancements and cost containments in academic support areas
- Use of distributed learning to accelerate progress toward degree completion and reduce expensive delays in graduation
- New revenue sources, including the extension of academic offerings to new learners
- Impacts of E-business on existing academic revenue streams

In these academic and academic support ventures, business officers can serve as resources for discerning a potentially successful expedition from one that cannot recoup the financial investment.

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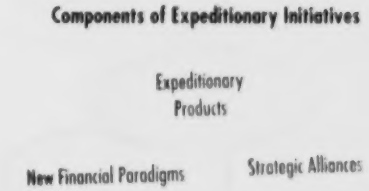
THE THREE COMPONENTS OF EXPEDITIONARY E-BUSINESS INITIATIVES

An E-business initiative must have these three components: (1) be expeditionary, (2) utilize ambitious strategic alliances, and (3) redefine the financial paradigm for E-business products, services, and experiences. The business officer is uniquely positioned to play a major role in these considerations. In particular, academic expeditions must reach out to larger markets if they are to be financially successful. Let us explore several examples.

Virtual universities reach out to new markets and new allies. The earlier discussion of today's virtual universities suggested that to be successful, they must practice expeditionary strategy and product development. This is necessary, but not sufficient. They must also reach out to new markets, attract strategic allies to provide competencies and investment, and change the economics of learning.

Components of Expeditionary Initiatives



New markets are critical to provide new revenue streams to pay off the investment in the interactivity-based support systems and learning materials necessary for a viable virtual university. In particular, the international markets and the distributed learning markets at residential universities in the United States are very attractive.

A wide range of strategic allies provide both needed competencies and investment. The California Virtual University has largely folded its operations because it was undercapitalized. Similar problems plague other virtual universities.

Virtual universities must change the economics of learning through shortening time to degree, reducing the cost of particular distributed learning experiences, and/or changing the nature of the process through which courses/learning experiences are prepared.

The business officer can be helpful in creating virtual ventures that fulfill these requirements and in gauging their impact on existing offerings on campus.

Measuring and inventorying the financial value for academic product. Robin Jenkins, president of Education Securities, Inc., suggests that in an E-business academic environment, colleges and universities may need to change their balance sheets in accounting for the financial value of intellectual information as inventoried collateral. By mirroring the accounting practices of motion picture and software companies, they could assign economic value to intellectual property.

This major step may be necessary as an E-business environment becomes more pervasive in the higher education marketplace. Institutions will need to measure and record the financial value of their intellectual product because the shortage of institutional capital available for program development and the high cost to distribute quality academic product will force them to pursue a combination of the following:

- Finance development of instructional product through the capital markets;
- Syndicate the cost of producing high quality academic pròduct among a distribution network of institutions;
- Partner with emerging education management and/or publishing companies to provide quality educational and/or administrative product that the institution can purchase rather than produce internally.

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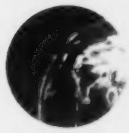
In the future, distributed learning will blend virtual and physical learning resources, so these principles will affect all learning environments and products. This will take the notion of "new markets, new alliances, new financial paradigms" to an even higher plane than previously suggested.

Is higher education capable of measuring and inventorying the financial value of all academic products? To participate in the E-business environment they will have to rise to this challenge. This will require far more useful cost accounting systems, the next generation of learning management tools, and new approaches to planning and budgeting. The active leadership and involvement of financial officers will be critical to this transformation.

The business officer is the key player or a significant advisor in all of the 20 initiatives listed in the last chapter of this book.

CHAPTER 

Policies, Standards, and Legal and Security Competencies

POLICIES, STANDARDS, AND LAWS: THE GLUE OF E-COMMERCE

If technology provides the components enabling E-commerce, then policies, standards, and laws are the glue that binds the pieces together in a system that users trust. The following policies have been suggested to assure global E-commerce.

1. Preservation of the Internet as a tariff-free environment.
2. Policies for electronic payment systems.
3. A uniform commercial code for E-commerce.
4. Protection of intellectual property through clear and effective patent, copyright, and trademark protection.
5. Assurance of personal privacy.
6. Global Information Infrastructure that is secure and reliable.
7. Information and communications infrastructure that is seamless, competitive, and customer-focused.
8. Content self-regulated by the industries.
9. Technical standards for interoperability established by the marketplace.

Source: "A Framework for Global Electronic Commerce." White House Conference.

Educational leaders must keep current on the evolution of the policies, standards, and laws to support E-commerce in education and other sectors. Learning enterprises should create a mechanism for sharing and maintaining the knowledge base on policies, standards, legal, and security issues. This knowledge base would include a variety of players—the campus attorney, CIO, and academic and administrative staff. The perspective should be both on what is currently allowable and what is likely to be feasible and allowable under policy in the future.

SECURITY, ASSURANCE, AND TRUST

E-commerce systems must be secure and protect privacy, but secure technology is only part of the equation. Secure systems and procedures and assurance that E-commerce is delivering what it promises are essential to establishing trust.

Trust

Security Assurance

"Trust cannot be built from bandwidth alone. Trust is not just about bits and bytes. It's about social relationships, and about building networks that deliver what they promise, be it a product, a collaboration, or simply reliable information."

Francis Fukuyama, "The Virtual Handshake: E-Commerce and the Challenge of Trust."

A number of organizations or enterprises are providing assurance services:

- TRUSTe (www.truste.com) is a global service that allows Web publishers to inform users of their sites' information-gathering and dissemination services. It assures users that sites are doing what they claim through periodic reviews and by affixing the TRUSTe logo on the Web page. It is supported by leaders in the online industry.
- Webtrust (www.cpawebtrust.com) is a service established by the AICPA to assure that Web commerce sites are providing the services they claim.
- Internet trust brokers are a new breed of company that provides assurance that particular companies are providing what they claim.

In many ways, trust becomes a key ingredient of one's brand on the Internet.

"In other words, what is needed as commerce is extended globally is an extension of the branding process for the whole range of products and services that could be conceivably exchanged over digital networks."

Francis Fukuyama, "The Virtual Handshake: E-Commerce and the Challenge of Trust."

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POSTSECONDARY ELECTRONIC STANDARDS COUNCIL

The recently created Postsecondary Electronic Standards Council (PESC) demonstrates the emergence of an association of the key players in electronic commerce in postsecondary education. The collaboration of business solutions providers, schools, associations, and federal government participants, signals the changing climate of E-business initiatives, and the need for cooperative, collaborative, partnerships to shape business activities in a new E-business framework. The very standards that these trading partners are coming together to define will provide the foundation for doing E-business in education.

Recently, PESC announced the formation of a study group to examine the standard issues surrounding the development of public key infrastructure within higher education. This initiative will help develop the secured transaction capabilities and enable immediate advances in doing business on the Web.

"A new partnership in higher education is capitalizing on resource sharing to assure that national and international electronic standards best serve the postsecondary community. Incorporating representation from campus administrative areas, financial aid lenders, testing services, administrative software vendors, and the U.S. Department of Education, the newly formed Postsecondary Electronic Standards Council participates in the setting and maintenance of standards of interest to the higher education community. These standards support such applications as electronic delivery of data for student financial aid processes, exchange of academic transcripts, and test score reporting."

—Press release from Postsecondary Electronic Standards Council.

ACCESS AMERICA

Access America Reengineering Through Information Technology, is a project to provide all Americans with greater access to federal services and benefits. Linking several key federal agencies, universities, and other industry partners, the effort will create a Web site gateway to access government services, electronic IDs to complete transactions over the Internet, and student accounts based on commercial financial infrastructure.

Its stated mission describes a national partnership to provide all Americans easy and secure electronic access to life-long training and educational services and to improve the delivery or related financial aid. The business goals include developing public confidence in conducting Internet-based business with the federal government, improving cash management controls and accountability in the delivery of federal student aid, and improving electronic access to federal training and education services. The Access America for Students pilot project will begin in 1999, or 2000, and involve eight colleges and universities: DeVry Institute of Technology, Iowa State University, New York University, Tarrant County Junior College, University of Florida, University of Missouri in Kansas City, University of Northern Colorado, and Western Governors University. This expedition has begun with the direct support of Vice President Gore, and clearly represents the collaborative and cooperative type of initiative that will be part of successful E-business initiatives.

THE ART OF THE POSSIBLE

Over time, policies, standards, and laws affecting E-commerce are likely to change dramatically under marketplace forces. The exact direction cannot be foretold. Developing competencies in navigating these changes will enable educators to practice the art of the possible with regard to E-commerce.

Websites on Policies, Standards, and Laws

A Framework for Global E-Commerce
www.whitehouse.gov/WH/New/Commerce/ index.html

ICOLC Statement on Electronic Information Interchange
www.library.yale.edu/consortia/statement.html

Protecting Copyrights Online
www.ppn.org/net98/apr/apr2.html

Project EASI and Access America
www.easi.ed.gov

CHAPTER

Strategic Alliances and Co-sourcing Competencies

SUPERCHARGED STRATEGIC ALLIANCES

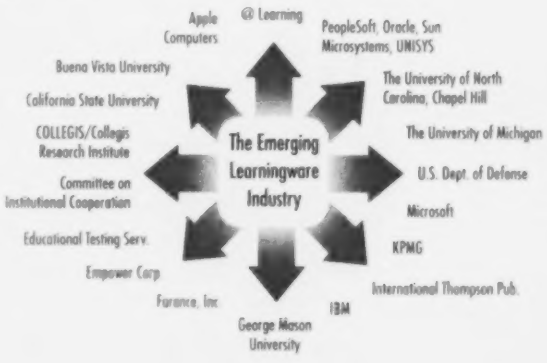
Strategic alliances in the Knowledge Age are bigger and more ambitious than ever before. The mergers and alliances in telecommunications—such as AT&T and TCI—are but the latest examples of a familiar trend.

These mergers and alliances affect E-commerce as well. American Online's (AOL) acquisition of Netscape and its alliances with Sun and other major players are largely driven by E-commerce potential. Larger firms are acquiring and aggregating many smaller E-commerce applications.

Similarly, the world of E-commerce and the next generation of learningware propel educators to a new plane of strategic alliances and relationships. Ten years ago aggressive strategic alliances would have involved a few peer institutions and a technology company or two. Today's strategic alliances involve a diverse pantheon of educational providers, vendors, and suppliers in learningware, publishing, and other services.

For example, the Instructional Management System (IMS), which began as a project alliance involving several leading universities and technology companies, has evolved in an expeditionary manner, attracting the Department of Defense and a variety of technology and learningware providers, thereby evolving its mission and thrust.

Another recent alliance demonstrates this trend. The Western Governors University, itself following an expeditionary path, merged with the British Open University in the United States, forming the Governors Open University.



These strategic alliances will be important in learningware, electronic publishing, administrative operations, and academic support services. They will open broader markets, enable more ambitious expeditionary products and attract great levels of investment.

ENTERPRISE RESOURCE PLANNING ALLIANCES

The current generation of enterprise resource planning (ERP) applications in higher education is being developed through a model of accelerated strategic alliances. First PeopleSoft, then SAP America, Inc., and Oracle entered the student information system (SIS) business in higher education by developing an SIS though partnership with institutional partners, building on their ERP expertise in other areas—finance, human resources, and logistics. Other implementation and technology partners were key to this process as well.

Co-sourced Utilities and Campus-based ERP

Campus-based ERP Applications

Now these ERP providers and others are working on the next extension of the campus-based ERP model: Web-accessed, virtual front- and back-office operations that can be operated as a utility. Campuses will co-source particular functions and pay for transactions actually-utilized. In addition, campus legacy systems will be made smarter and more user friendly through Web front ends. The combination of surgical co-sourcing and revival legacy systems will enable new, affordable options for many campuses.

OUTSOURCING AND CO-SOURCING

Many administrative support functions in higher education—bookstores, food service providers, information technology services—have been outsourced. Now, new developments in financial aid and financial services are being added to these existing outsourcing capabilities. These outsourcing competencies constitute the "thin tip of the wedge" for creating the new generation of co-sourcing relationships.

Outsourcing/Co-sourcing in Learningware

Real Education (www.realeducation.com) is working with universities to create online, Internet-based courses using university-generated content.

First Class (www.1stclass.com) is working with universities using an interactive course template to create online courses on university servers.

Embanet (www.embanet.com) develops courseware for colleges and universities, running the courses on Embanet servers, and making the courses available online.

Blackboard (www.blackboard.net) is a free service that enables instructors to add online components to their classes or even host an entire course on the Web. It creates communities of learners and teachers.

Asymetrix (www.asymetrix.com) is the training industry's leading single-source provider of global, enterprise-wide, online learning solutions.

Governors Open University (www.wgu.edu and www.open.ac.uk) provides online university support services and solicits online, competency-based courseware from a variety of participating institutions.

MyCollege.net (www.mycollege.net.org) provides an intranet-based system developed for the Harvard Business School to manage learning resources and interactions.

Outsourcing: Apollo Group and AAPS. The recent announcement in December 1998, of a strategic outsourcing agreement between the Apollo Group, Inc., and Arthur Andersen Process Solutions (AAPS) provides an excellent example of co-sourcing. Through this unique relationship, Andersen will manage significant components of the financial aid processing for two of Apollo's subsidiaries, the University of Phoenix, Inc. (UOP), and Western International University, Inc. (WIU).

As a unique nontraditional, distance-learning-based, virtual university, UOP, with over 90 campus locations throughout the United States, faces complex process challenges in delivering financial aid support. By taking advantage of advanced network technologies, Andersen has created a virtual back-office operation in Phoenix that will provide the national campuses a range of financial aid processing solutions, including student award processing, aid disbursement transactions, and refund calculation.

We believe that our industry will increasingly move in the direction of these strategic, co-sourcing partnerships, where noncore, transaction, and data intensive back office operations are outsourced to key solution providers, via enhanced networked systems—the true "virtual back office."

A new mode for the knowledge and learning industry. The higher education industry is evolving into a new knowledge and learning industry. We believe that this new industry will increasingly make use of these strategic, co-sourcing partnerships. Noncore, transaction, and data-intensive back-office operations will be outsourced to key solution providers via enhanced networked systems—the true virtual back office.

Co-sourcing is the next generation of outsourcing. It involves an intimate partnership between the college or university and its outsourcing vendors. In a strategic co-sourcing relationship, many functions are surgically outsourced, that is, carefully delineated portions of particular functions and selected for co-sourcing. Those portions of functions that remain in-house have their performance enhanced through close collaboration with vendors.

EXAMPLES OF SURGICAL CO-SOURCING

What are some future applications of surgical co-sourcing? The following table shows some possibilities.

University-Managed	*Co-sourced*
• Admissions policy	• Admissions processing
• Financial aid policy	• Financial aid operations
• Course regulations	• Enrollment certification reporting
• Bursar policy	• Loan processing
• Tuition rate	• Student billing
• Alumni relations	• Annual giving—alumni marketing, one to one
• IT policy, selected operations	• Other selected operations: software, application management, network, infrastructure, hardware
• Auxiliary operations policy	• Selective services: dining, bookstore, security, buildings/ grounds, utilities
• Primary ownership responsibility for learning and learning support	• Use of distributed learning channels and resources

Over the next few years these applications will be developed through alliances similar to the UOP/AAPS arrangement involving a wide range of vendors and institutions.

KEY CAMPUS PLAYERS IN CO-SOURCING

Campus co-sourcing will not just involve the chief business officer and auxiliary affairs officers. A broad range of academic and administrative players will be involved in planning, designing, implementing, managing, and evaluating co-sourcing relationships.

Key Campus Players in E-Business and Co-sourcing

- Business officer
- Provost
- Bookstore manager
- Student affairs professionals
- Faculty and adjuncts
- Auxiliary enterprises—food services, housing directors
- Librarian
- Chief information officer
- Professionals involved in "skunk works" for academic programs to create a different cultural environment that fosters innovation and expeditionary programs
- Continuing education/distance learning professional
- University press/intellectual property officers

Faculty and adjuncts will be involved in co-sourcing relationships involving learning and other scholarly activities. In the world of distributed learning, even residential learning experiences will be enriched by virtual resources and interactions that will amount to co-sourcing many academic activities. While faculty will not surrender responsibility for the learning experience, they will increasingly use additional resources and teams to enrich the experience for learners and faculty.

CHAPTER

New Tools: Electronic Publishing, Learningware, Learning Agents, and Online Communities

ELECTRONIC PUBLISHING

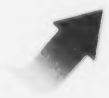
Over the next decade the textbook and academic publishing industry will be transformed for a number of compelling reasons:

- Excessive costs of the current publishing model—large and expensive inventories, need to destroy excess books, and inflated costs of content—invite competition;
- Decreasing shelf life of knowledge, need for continuous updates call for virtual text;
- Dramatically decreasing percentages of students purchasing textbooks, new or used suggests dissatisfaction and opportunity;
- Attractiveness of personalization and customization in textual materials; and
- Availability of Web-based materials and competing content at reduced prices.

Traditional books and course packs will not disappear, but other choices will emerge to serve the needs of learners, teachers, and practitioners in communities of practice. Over time, publishing in many professional fields where the shelf life of knowledge is short will be subsumed into communities of practice.

The attractiveness of different modes of publishing/availability will vary. Challengers from outside the current publishing industry—E-business enterprises—will write publishing's new rules. These new competitors will not go head-to-head with the existing publishing model. Instead, they will create new collections of knowledge tied in many cases to communities of practice and professional groups. And, they will find ways to change the economics of publishing by fusing Web-based publications with meetings, learning materials, and other experiences valued by customers. This fusion of activities will dramatically change the economics of publishing.

A Diversity of Traditional and Transformed Publishing



Traditional Publishing Plus New Expeditionary Modes

New Competitors Will Rewrite the Rules for Publishing

Publishers Own Intellectual Property, Control Rules

Publishing in the Knowledge Age

Traditional modes	• Traditional textbooks • Course packs
Evolution of traditional modes	• E-books—book-sized electronic repositories holding 1,200 pages of text. • Print-on-demand, package-on-demand • Virtual books—online, regularly updated texts accessible via password, supported by chat rooms and linked resources.
New approaches	• Personalized learningware and content, perpetually revised • Communities of practice, create bodies of knowledge that replace text and journals

Traditional publishing modes will not disappear. They will compete with incrementally evolving forms of existing publishing models and with new, transformed approaches. The following table compares these modes today, in the short term, and in the long term.

The Emerging Electronic Publishing Industry

	Today	*Short Term*	*Long Term*
Traditional books, course packs	• Capacity to order and pay for traditional books and course packs online. • Buying communities personalize offerings for users.	• Increasing percentage of academic course materials ordered online. Also E-books, print-on-demand, and virtual resources grow and cut into market share of traditional modes. • Buying communities grow.	• Most academic courseware ordered online. Traditional books and course packs largely give way to virtual courseware and continuously updated online bodies of knowledge. • Buying communities become widespread.

Virtual books	• Major textbooks and electronic journals are becoming available online via intranet and password access.
	• New features added: continuous updating, hypertext, search tools, cross-reference links, and chat rooms.
		• Increased access to virtual textbooks in various forms:
		  • Individual ownership and password
		  • Institutional licensing
		  • Pay-per-use
		• Continuing increase in value added through interactivity, links to other resources, and personalized features.
			• Virtual books become the standard for rapidly changing fields, professions, and continuing professional education.
			• Annual updates of learning and practice in professional fields are packaged and sold as a separate product.

The Emerging Electronic Publishing Industry (continued)

	Today	*Short Term*	*Long Term*

Personalized, virtual resources	• Beginnings of new learningware appear:
	  • Web-based learningware
	  • Personalized learningware
		• Scaleable, personalized, learningware industry grows and reaches many learners. Learners do their own personalizing.	• Learningware industry reduces market share of traditional content vehicles.

E-books	• First generation of E-books. • Rocketbook	• Materials available via E-book expand and personalization grows. • Second generation E-book devices become available.	• E-books become popular but not dominant. • Subsequent generations of devices become available.
Print-on-demand, package-on-demand	• Print-on-demand is limited to the holdings of individual publishers and strategic alliances. • Technology provides an inexpensive print-on-demand option, where intellectual property rules permit.	• Metering, E-commerce, and strategic alliances between publishers make it possible for third-party "utilities" to provide widespread package-on-demand services, which are mostly print-based, but sometimes virtual.	• Utilities grow, spanning publishers' domains. Packaged materials are also available online, continuously updated. Packagers serve as "learning agents" in assembling content.
Communities of practice, body of knowledge	• Major texts in professional fields serve as the beginning few online communities.	• Electronic journals, best practices, and other resources are added to online communities. • Interactivity and personalization grow.	• Communities of practice accumulate a body of knowledge that drives the profession. • Examples of exemplary practices thrive.

Who will emerge as the predominant players in tomorrow's multi-faceted publishing environment? It is impossible to predict, but these points are clear:

- E-business will be a key ingredient in most fields.
- Personalization will become commonplace in publishing.
- Users will expect perpetual updating of content in most disciplinary fields.
- Price, convenience, speed, and greater choice will be determining factors.
- Consumers will seek communities of commerce and practice.

Companies in the publishing industry are responding in interesting ways to these developments. Where possible, publishers are using the Web to sustain market advantage.

CASE STUDY: WILEY USES THE WEB FOR MARKET ADVANTAGE

John Wiley & Sons is following a strategy of focused publishing in a select number of scientific, technical, and business disciplines. In the past, this meant it was a small player in comparison with broad-based conglomerates in the textbook business such as McGraw-Hill and International Thompson Publishing. In the areas where Wiley does publish, it is often a leader in the college, professional, trade, and journal markets.

Traditional channels of distribution use different channels for journals, books, and textbooks, making it difficult for Wiley to integrate its deep offerings to reach the professional consumer. The Web changes that; Wiley's emerging Web strategy is targeting end users that value its depth in selected disciplines.

For example, students and faculty using Wiley's *Intermediate Accounting* textbook by Kieso and Weygandt are provided with a Web site (www.wiley.com/college/kieso/) that provides supplemental textbook information and access to Wiley's CPA Exam Review and online GAAP products, which are published by Wiley's Professional and Trade Division.

In this manner, Wiley is treating its student customers as emerging accounting professionals, offering an integrated selection of products, services, and experiences. In addition, Wiley's relationship with these emerging professionals has proven attractive to strategic allies, such as the *Wall Street Journal,* that want to reach the same emerging professionals. Using E-business, Wiley is demolishing the existing product silos and is engaged in an expedition to create stronger, ultimately customizable, and perhaps even *fused* products and experiences for the emerging market.

GLOBAL LEARNINGWARE: A NEW BREED OF LEARNING MANAGEMENT SYSTEMS

The new learningware industry will require new tools and standards for learningware products and more. A new generation of learning management systems will emerge to handle the diverse and complex tasks of learning management in the Knowledge Age.

Next Generation of Learning Management Systems

- Support for all types of learning—traditional, distributed, and transformed
- 100,000+ active learners
- Academic and administrative functional areas fused
- Multiple modes of payment—lump sump and pay-per-use
- Interactive learningware and recombinant content
- Mass customized learning, certification of mastery, skills banks
- Powerful relationship management tools

Based on existing efforts in the marketplace for learner information systems and learningware, the following are potential sources for elements of emerging solutions:

- ERP software companies
- Developers of Web-based middleware
- Virtual universities and learning enterprises
- Innovative distributed learning enterprises—on campus and in other settings
- Proprietary learning and training operations
- Corporate universities and training linked to business operations
- New competitors, as yet unidentified

New solutions will likely result from strategic alliances among a number of these sources.

A NEW BREED OF PERSONAL AGENTS

In the world of E-business, the traditional intermediary is dying. But a new breed of value-added middle person is emerging, called by different names, depending on the nature of the value-added role: *infomediary, metamediary, learning agent, personal agent.* The important thing about these new players is that they signal a number of significant shifts in the needs and power of the customer in the world of E-business.

- From product-centered to activity-centered
- From providers to brokers or switching agents
- From selling what we have to finding what you need

These changes will have profound effects on all marketplaces—including education. They herald a new generation of communities of practice, served by powerful, personal, learning agents.

A New Breed of Metamediaries

	Old Commerce	E-Commerce
Players	*Intermediary*	*Metamediary*
Future Prospects	Intermediaries decline, fall victim to disintermediation	Metamediaries increase dramatically, providing important services
Market Focus	Fixed markets	Navigator to expanding, changing markets
Customer	Needs intermedaries less and less	Needs metamediaries who serve personalized needs
Shift in Emphasis	From product-centric intermediaries	To activity-centric aggregators, building activty-based communities

LEARNING AGENTS AND COMMUNITIES

E-commerce enterprises in businesses, associations, and government are aggressively developing learning agent tools and building online communities. We can develop similar practices in education by following their example.

Creating a distinctive online experience. The dream of every E-commerce venture is to create an online experience that is both distinctive and valuable. These experiences typically attract and bunch together customers with similar interests. They are based on the capacity to offer products, services, and experiences customized to customer needs.

Some would call these clusters the beginnings of online communities, but the term *community* is used far too casually. In order to thrive, real communities must be bound by shared values and principles. The provider must also be seen as having the integrity to serve as learning agent and convener of a real community of practitioners. Commercial providers need an agent to provide that integrity.

For these reasons, the online clusters that become communities will likely be those that are assembled by strategic alliances of professional societies or other high-integrity organizations.

Ingredients in a Community of Practice

- Existing or latent shared interest—profession, hybridized area of expertise, trade, craft, philanthropy, cause, avocation.
- Pervasive interactivity, E-business tools, facilitation of commerce, personalization of products, services, and experiences
- Integrity, trust, security, assurance
- Choice among options

Online communities of practice-driven products. Savvy professional societies and associations are planning ways they can create such online communities of reflective practitioners, in which pracitioners continuously reflect on, and improve their professional practice. They hope to use these online communities to create new interactivity-rich relationships with members and other customers. Using this interactivity as a base, they will deploy intranet tools, personalization, and customization to support both continuing professional education and future textbook products. Consider the following examples.

The California Society of CPAs has developed a Business Services Network utilizing a secure, powerful intranet. This network will join every practicing CPA in California, enabling them to access expertise, forge partnerships, and win business. Over time it will become the organization's portal to other Web-based resources, including continuing professional learning, publications, and meetings.

The Regulatory Affairs Professional Society is developing a strategy for leveraging its certification programs, meetings, and interactivity with members to develop a community of practice serving its membership. It will eventually expand its learning program and textual products to service the entire industry.

From product to community to portal. Consider the case of Emedicine.com. This Web site contains a textbook on internal medicine; teams of distinguished physicians write and continuously update its 28 chapters. This material is available free of charge. The creators of this site are trying to attract practitioners of internal medicine, who will be offered a range of products, services, and experiences, in addition to the textbook. The creators are counting on advertisers and revenues from derivative products and services to create a profit.

Using its internal medicine product as bait, Emedicine.com is trying to create an online community of practitioners who can be enticed into E-commerce through this site. Eventually, if successful, the site could become a full-fledged portal for practitioners of internal medicine, accessing many associated products, services, and experiences.

Creating online academic communities. How could online academic communities develop? Consider an online executive MBA (like the one at Duke University). The first step is to attract a cohort of executives willing to engage in a fundamentally online MBA experience. Following the completion of the 18-month program, graduates of the program could enter into an online "collaboratory," which extends the experience through the sharing of exemplary practices, joint problem solving, and other value-added services. Over time, the collaboratory will add additional graduates, practitioners, researchers, and faculty. It will provide personalized products, services, and interactions. This will become a real community of reflective practitioners.

Migration paths to communities of practice. Online communities of practice may emerge as the defining organizational form of real commerce, which will require us to understand how they develop. The pervasive interactivity provided by the next generation of ICT-based tools will enable us to take these communities to new levels of accomplishment.

Most communities of practice begin with some existing professional or trade group, philanthropic cause or federation. Many begin with an informal collection of people interested in an emerging hybridized field of interest. These communities of practice cut across organizational and disciplinary boundaries and existing professional categories. They are united by an interest, cause, or need and energized by a new online means for fulfilling that need or serving that cause or interest. Multiple migration paths exist for the creation of robust, online communities of practice.

Interactivity. Organizations like the California Society of CPAs take an existing practice community and raise it to a new level through intranet-based interactivity. Many professional and trade-based communities of practice develop this way.

Learning. Online learning can link learners into learning communities oriented toward individual courses, degree programs, or certificate programs. Some of these learning experiences can become gateways to ongoing collaboratories or communities of practice.

Publishing. Several professional societies are using their leading textbooks in their field as the starting point for online communities of practice. The textbooks are digitized and become perpetually updated sources of the core body of knowledge for the profession. They are then made available to professionals in training and used as a portal to a collaboratory for practitioners, advanced students, researchers, and faculty.

Meetings and trade shows. Few trade shows these days are stand-alone products; rather they are fused with learning, Web-based publications, and other materials. These fused materials and experiences create a continuous virtual trade show that enhances the physical trade show experience. Some associations are using their trade shows and conferences as the migration path to their community of practice.

E-commerce. Finally, some organizations are using E-commerce applications to build communities of buyers and suppliers of particular products and services. Often these groups are assembled around an initial E-commerce focal point that can lead to more substantial interactions.

Migration Paths to Communities of Practice

COMMUNITIES OF PRACTICE AND THE PERMISSION ECONOMY

The community-of-practice concept resonates especially well with several key principles articulated by Seth Godin in his book *The Permission Economy*. Put simply, designers of successful communities of practice must abide by the following expectations of community members and users:

- *Anticipation.* Users access Web-based venues in anticipation of solving a problem or finding what they need in an effective and satisfying manner. When their needs are unfulfilled or the experience is unsatisfying, they will go elsewhere.
- *Permission.* There is an explicit agreement online to talk and share information based on trust and previous commitment. The community has the individual's implicit permission to serve as a learning agent.
- *Personalization.* The exchange of information is from one person to another and is personalized.
- *Indispensable.* Knowledge Age customers will only access communities that move beyond mere relevance to make themselves virtually indispensable to each and every individual's needs.

To succeed in this new environment, organizations must meet these criteria every day and in competition with skilled providers. There is no ribbon for second place.

CONTINUING PROFESSIONAL EDUCATION

These forces will lead to a new golden age for continuing professional education. The growth in CPE will be based on new generation of diploma and certificate programs and new variations of graduate degrees based on collaboratories. Moreover, new levels of continuing professional education will be developed, extending beyond masters to include recognition such as grand master, virtuoso, and master practitioner that will extend through active professional lines spanning 50 years or more.

Continuing Professional Education

- Massive growth area
- New generations of certificates and diplomas
- New variations of graduate degrees—all collaboratory driven
- Communities of practice shaped by professional and industrial organizations, not academic organizations
- Gateway and introduction to professional practice

In conclusion, the Knowledge Age could provide organizational forms (online communities) and approaches to commerce (fusion of products, services, and experiences) that dramatically realign our approaches to academic enterprise.

CHAPTER

Paving the Way for E-Business: 20 Initiatives for Your Learning Enterprise

Every campus should be engaged in expeditions to develop the capacity to engage in E-business in the future. The following examples of initiatives can be the foundation for those expeditions. They should be tailored to each campus setting, using existing initiatives and ideas to launch or invigorate expeditions.

1. Develop the basic campus ICT infrastructure.

Post the vision and planning for information and communications technology (ICT) infrastructure on a Web site and engage in dialogues with the campus community on the potential uses for ICT to enhance and transform scholarship and learning. Deal with E-business and other important applications. Invite comment and dialogue.

2. Develop a campus strategy for information systems.

Include a migration path to enterprise resource planning (ERP) systems, to the next generation of Web-based learning management systems and learning support applications, and to E-business. Engage many stakeholders—both on and off campus—in discussing and evolving strategies. Brief the board of trustees on the strategic nature of E-business.

3. Create small campus teams responsible for strategic thinking about E-business applications.

Challenge the campus community with new thinking. Post white papers and references to E-business applications on a Web site available to the campus community. Develop and share expertise on E-business applications in academe. Monitor E-business developments in other settings and translate their implications for academic applications. Create a cross-disciplinary and cross-functional perspective on E-business. Create dialogues involving the CEO, CFO, CAO, and CIO on these opportunities.

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4. **Deploy electronic data interchange (EDI) and automated clearinghouse (ACH) functions; develop competencies in applications using these technologies.**

   Participate in purchasing registers and other means to support business-to-business transactions using E-commerce. Become competent in EDI and ACH applications and anticipate future use of these competencies in other applications.

5. **Cultivate outsourcing and co-sourcing relationships in a variety of administrative and academic support areas.**

   Develop co-sourcing competencies and share insights across the campus community. Move beyond auxiliary enterprises, such as food service, bookstores, and housing. Be aware of the latest developments in virtual front- and back-office applications and their potential migration paths.

6. **Initiate Web processing for administrative forms, applications, and fee payments.**

   Expand Web processing to academic applications as well. Plug into emerging national communities of practice of Web developers for administrative and academic applications.

7. **Evolve your campus Web site into a portal.**

   How can your Web site become a "sticky" site for students, staff, and faculty, a place where they can personalize the site, create or import other functionality, and never leave? Partner to bring value-added services to your site, increase traffic, and build the potential for advertising and branding opportunities for your institution and your partners.

8. **Utilize campus card programs as migration paths for developing E-business.**

   Migrate the campus strategy for card development out of auxiliary services and into the administrative and academic mainstream. Begin with whatever capability is currently available and progressively enhance functionality to include vending, copying, food service, beverages, academic support, academic materials, and recreation. Experiment with digital cash applications as a complement to smart cards, campus debit cards, and other mechanisms.

9. **Be certain your campus has access to an expert or interested professional who knows the latest developments in the law, security issues, and policy issues relating to E-business.**

   Access Web site materials on these issues and make them available to the campus. Illuminate migration paths and ultimate capabilities, not just current limitations.

10. **Migrate financial aid transactions and financial services into an E-business mode.**

    Share examples from other institutions and understand examples of effective practice. Consider co-sourcing opportunities.

11. Develop a campus focus on distributed learning.

This could include establishing a "skunk works" for expeditionary academic programs. A key part of its responsibilities will be to provide for E-commerce capabilities and also deal with flexible, customizable offerings and record keeping.

12. Support faculty experimentation with Web courses, including the exchange of content and payment online.

Become part of communities of practice on Web course development and provide Web site links to exemplary practices on other campuses.

13. Use course Web capabilities through the campus bookstore to share course materials and learning support materials from other campuses.

Support partnerships in providing course materials among the campus bookstore, library, and academic departments.

14. Progressively enhance strategic alliances with other course providers, technology companies, and others involved in distributed learning.

Strategic alliances are essential to overcome the "not invented here" syndrome for learning and learning support materials. Develop competencies in using distributed academic materials from other settings to enrich the learning experience.

15. Experiment with interactive learningware.

Keep apprised of the developments in the National Learning Infrastructure Initiative (NLII) and the Instructional Management System (IMS). Develop mechanisms for sharing these insights on campus.

16. Develop campus expertise in new approaches to publishing.

Develop print-on-demand applications and capabilities to support academic applications of virtual publishing and communities of practice. Utilize electronic books and similar tools. Participate in online journals and academic materials. Share repositories of insight on these approaches with faculty.

17. Develop E-mail and knowledge management systems to stimulate the sharing of information and insight on campus.

Deploy the tools and techniques of knowledge management on campus as part of academic programs and academic/administrative practice.

18. Foster broader strategic alliances in addressing ICT and E-business opportunities.

Use strategic alliances to build competencies, attract investment, and undertake more ambitious initiatives. More robust strategic alliances are necessary for administrative, learning, and learning support applications. Build your organization's capacity to both forge partnerships and participate in broad alliances.

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19. Monitor the development of online communities of practice and their impact on E-business applications.

Scanning should include communities of practicing professionals, online learning communities, and other groups. Understand how these communities change the dynamics of publishing, learning, and other academic support activities.

Professional associations and other strategic allies will be essential in the use of communities of practice to reinvent continuing professional education. This is a major area of potential growth for colleges and universities.

20. Stimulate ongoing dialogue across campus on the emerging importance of E-business in transforming distributed learning, administrative functions, and academic support.

Explore how learning communities and professional communities of practice could dramatically change the patterns and cadences of the learning experience. The expeditionary path to E-business applications in academe begins with such initiatives. Turn your ideas into expeditions today.

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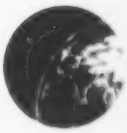

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ONLINE RESOURCES

The following online resources provide a sampler of today's E-commerce offerings and a hint of tomorrow's possibilities for E-business.

Commerce	
Autoweb.com	www.autoweb.com
BankOnline.com	www.bankonline.com
Blue Mountain Arts	www2.bluemountain.com
Buy.com	www.buy.com
CDNow	www.cdnow.com
Charles Schwab	www.schwab.com
Beyond.com Corporation (computer products)	www.Beyond.com
Disney Online	www.disney.com
Drugstore.com	www.drugstore.com
eBay Inc.	www.ebay.com
eToys Inc.	www.etoys.com
E*Trade	www.etrade.com
Eddie Bauer	www.eddiebauer.com
Holt Educational Outlet	www.toysmart.net
iBaby	www.ibaby.com
IBM MiniPay	www.hrl.il.ibm.com/mpay/ index.html
Internet Fashion Mall	www.outletmall.com
L.L. Bean	www.llbean.com
Movies	www.reel.com
Music Boulevard	www.cdnow.com
Preview Travel	www.previewtravel.com
Recreation Equipment Inc.	www.rei.com
Wells Fargo	www.wellsfargo.com

Portals	
Altavista	www.altavista.com
America Online	www.aol.com
Buy.com	www.buy.com
Downtown Anywhere	www.awa.com
Excite	www.excite.com
Go.com	www.go.com
Infoseek	www.infoseek.com
Lycos	www.lycos.com
MSN.com	www.home.microsoft.com
Navigators's Homepage	www.netcenter.com
NetCommerce	www.netcommerce.com
Shoppers Connection	www.shopperconnection.com
Yahoo	www.yahoo.com

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Online Communities

Cisco Systems	www.cisco.com
Healtheon	www.healtheon.com
Mining Company	www.miningco.com
Tripod Inc.	www.tripod.com
WebMD	www.webmd.com
World Clinic	www.worldclinic.com

Changing the Economics

Abuzz	www.abuzz.com
Arthur Frommer's Budget Travel Online	www.frommers.com
Bank One	www.bankone.com
Broadcast.com	www.broadcast.com
Buy.com	www.buy.com
Drugstore.com	www.drugstore.com
E-Loan	www.eloan.com
eFollet.com	www.efollet.com
eWallet	www.ewallet.com
Educause	www.educause.edu
Financial Engines	www.financialengines.com
Fodor's	www.fodors.com
General Motors' OnStar	www.gm.com
Homeshark	www.iown.com
iShip	www.iship.com
Loanshop.com	www.loanshop.com
Marketing 1 to 1	www.1to1.com
Moai Technologies	www.moai.com
NextCard	www.nextcard.com
Reel.com	www.reel.com
Rough Guides	www.roughguides.com
ValuPage	www.valupage.com
Works.com	www.works.com

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Comparison Shopping Sites	
Active Buyer's Guide	www.activebuyersguide.com
BottomDollar.com	www.bottomdollar.com
CompareNet	www.comparenet.com
Inktomi	www.inktomi.com
Jango	www.jango.com
Junglee	www.junglee.com
MySimon	www.mysimon.com
Personal Logic	www.personalogic.com
RoboShopper International	www.roboshopper.com
W3Shopping.com	www.w3shopping.com
WorldSpy	www.worldspy.com
Outsourcing and Co-sourcing	
Brigade Solutions	www.brigadesolutions.com
CollegeNet	www.collegenet.com
CourseWeb	www.courseweb.org
Embanet	www.embanet.com
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Dr. Norris has guided dozens of corporations, associations, and colleges and universities in realigning their visions and programs to the environment of the new economy. His major clients have included Oracle, PeopleSoft, Sallie Mae, Nissan R&D, U.S. Chamber of Commerce, American Society of Association Executives, College of American Pathologists, EDUCAUSE, the California Society of CPAs, PBS, Harvard University, University of Alabama System, Indiana University, George Mason University, and the Georgia Institute of Technology.

Dr. Norris wrote *A Guide for New Planners* for the Society for College and University Planning as well as the Transformation Trilogy: *Transforming Higher Education: A Vision for Learning in the 21st Century; Revolutionary Strategy for the Knowledge Age;* and *Unleashing the Power of Perpetual Learning.*

Dr. Norris is widely recognized as an expert practitioner in developing ICT and learning infrastructures for the Knowledge Age and campus facilities to support them. He developed a program for PBS titled "Creating Tomorrow's Learner-Centered Environments—Today!"

Prior to his consulting career, Dr. Norris served in a succession of universities for 13 years as a researcher and administrator. In 1995 he became a senior fellow at the Institute for Educational Transformation at George Mason University in Fairfax, Virginia.

Mark A. Olson was recently appointed vice president, business development, for a new subsidiary of Sallie Mae. The new company will be delivering business process outsourcing solutions, information technology outsourcing and service bureau offerings, as well as a range of strategic Web-based solutions to colleges and universities.

Mr. Olson joined Sallie Mae as vice president of marketing systems, in which capacity he was responsible for several key systems initiatives targeted to identify new ways that the company might assist in dealing with the critical issues facing higher education financing today. From cost containment to enhanced service delivery and advanced technology solutions, Marketing Systems works with higher education, and other industry trading partners, leveraging Sallie Mae's core business competencies.

Prior to Sallie Mae, Mr. Olson was the deputy vice president for Student Administrative Services at Columbia University. Responsible for the range of student services—from the registrar to the bursar, from systems to financial services and career services—he was charged with the reengineering and redesign of student service delivery organizations. Prior to his five and one-half years at Columbia, Mr. Olson worked for over a decade at the University of Southern California in a variety of capacities in systems and student services.

He is an active member of several national associations, specifically EDUCAUSE (member for five years, and past chair of the *CAUSE/EFFECT* Editorial Committee); CUMREC (six years on Board of Directors, serving as chair, president, and former conference general chair); COFHE (assembly representative for Columbia University); Project EASI (steering committee member); NASFAA; and EDUCOM. Mr. Olson speaks to groups on issues ranging from technology to student financing and business process reengineering, and has a lengthy list of publications and presentations.

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